THE
BOTANICAL GAZETTE

EDITOR
JOHN MERLE COULTER

VOLUME LXI

JANUARY–JUNE 1916

WITH THIRTY-ONE PLATES AND SIXTY-SIX FIGURES

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO, ILLINOIS

Published
January, February, March, April, May, June, 1916

Composed and Printed By
The University of Chicago Press
Chicago, Illinois, U.S.A.

TABLE OF CONTENTS

		PAGE
The action of Schumann rays on living organisms (with four figures)	*W. T. Bovie*	1
Western plant studies. III	*Aven Nelson* and *J. Francis Macbride*	30
A Mexican *Aytonia*. Contributions from the Hull Botanical Laboratory **211** (with plates I–IV and four figures)	*Anna M. Starr*	48
Notes on succession from pine to oak	*Barrington Moore*	59
The pathology of ornamental plants	*Mel. T. Cook*	67
Origin and development of the lamellae in *Coprinus* (with plates V–XII and six diagrams)	*Geo. F. Atkinson*	89
On the germination of the pollen grains of apple and other fruit trees	*J. Adams*	131
The decrease of permeability produced by anesthetics (with six figures)	*W. J. V. Osterhout*	148
On pairs of species (with twelve figures)	*Reginald Ruggles Gates*	177
Abscission in *Mirabilis jalapa* (with plate XIII and two figures)	*Francis E. Lloyd*	213
The development of the conceptacle in *Fucus*. Contributions from the Hull Botanical Laboratory **212** (with plates XIV–XVII)	*Mabel Lewis Roe*	231
A new method of separating fungi from protozoa and bacteria	*Nicholas Kopeloff*, *H. Clay Lint*, and *David A. Coleman*	247
Biochemical and physiological study of the rest period in the tubers of *Solanum tuberosum* (with two figures)	*Charles O. Appleman*	265
Decay and soil toxins. Contributions from the Hull Botanical Laboratory **213**	*George B. Rigg*	295
Nuclear division of *Spirogyra*. II. Nuclear division in *S. bellis* (with plates XVIII–XX)	*Mabel L. Merriman*	311
The embryo sac of *Richardia africana* Kth. (with plates XXI–XXIII)	*Margaret R. Michell*	325
Stangeria paradoxa. Contributions from the Hull Botanical Laboratory **214** (with plates XXIV–XXVI and one figure)	*Charles J. Chamberlain*	353

93154

PAGE

Undescribed plants from Guatemala and other Central American Republics. XXXIX - - *John Donnell Smith* 373

Notes on the anatomy of the young tuber of *Ipomoea Batatas* Lam. (with eight figures) - *Florence A. McCormick* 388

Xerofotic movements in leaves (with eight figures) *Frank C. Gates* 399

Physical properties of some toxic solutions *George B. Rigg, H. L. Trumbull,* and *Mattie Lincoln* 408

Five undescribed species of *Ravenelia* - - - *W. H. Long* 417

A study of the life history of *Trillium cernuum* L. (with plate XXVII) - - - - - - - *Margaret Heatley* 425

The significance of color changes in oxidase reagents - - - - - - - - - - - *G. B. Reed* 430

Reduction divisions in the pollen mother cells of *Allium tricoccum.* Contributions from the Hull Botanical Laboratory 215 (with plates XXVIII–XXX and one figure) - - - - *Mildred Nothnagel* 453

The vegetation of the Selkirks (with map) - - *Charles Hugh Shaw* 477

Studies in the genus *Bidens.* III. Contributions from the Hulll Botanical Laboratory 216 (with plate XXXI) - - - - - - - - - *Earl E. Sherff* 495

The occurrence of bacteria in frozen soil (with two graphs) - - - - - - - - - - *E. C. Harder* 507

The prothallia of *Ophioglossum vulgatum* (with four figures) - - - - - - - - - *Norma E. Pfeiffer* 518

The measurement of oxidation potential and its significance in the study of oxidases (with two figures) - - - - - - - - - - *G. B. Reed* 523

BRIEFER ARTICLES—

Edward Lee Greene (with portrait) - - - - *J. N. Rose* 70

The pollination of *Asclepias cryptoceras* (with one figure) - - - - - - - - - - *Edwin Payson* 72

Physical conditions in sphagnum bogs - - - *George B. Rigg* 150

Chloroform as a paraffin solvent in the imbedding process - - - - - - *D. M. Mottier* and *W. J. G. Land* 252

Besseyosphaera, a new genus of the Volvocaceae - *Walter R. Shaw* 253

A method for the dehydration of histological material - - - - - - - - - - - *J. Ben Hill* 255

Bisporangiate cones of *Larix* (with one figure) - *J. E. Kirkwood* 256

Preparation of copy - - - - - - - - 337

PAGE

The structure of the spikelet of *Aphanelytrum* (with one figure) - - - - - - - - - *Agnes Chase* 340

Count Solms-Laubach (with portrait) - - - - *D. H. Scott* 433

Charles René Zeiller (with portrait) - - - - *E. C. Jeffrey* 528

CURRENT LITERATURE - - - - - - - - - 75, 164, 258, 344, 435, 530

For titles of book reviews see index under author's name and reviews

Papers noticed in "Notes for Students" are indexed under author's name and subjects

---

DATES OF PUBLICATION

No. 1, January 15; No. 2, February 19; No. 3, March 15,; No. 4, April 18 ; No. 5, May 15; No. 6, June 15

ERRATA

Vol. LX

P. 297, line 3 from top, for *Cunninghamia Davidiana* read *Cunninghamia sinensis*

P. 462, line 7 from bottom, for angle read angles

P. 499, line 15 from top, for embryo read cotyledon

Vol. LXI

P. 52, line 21 from top, for under read upper

P. 77, line 11 from bottom, for Beec. read Becc.

P. 77, line 10 from bottom, for 291–410. *pl. 20* read 391–410. *pls. 15–20*

P. 78, line 14 from top, for 1914 read 1913

P. 78, line 20 from top, for **11**:326–403 read **17**:326–403

P. 78, line 20 from bottom, for *Chamodora* read *Chamaedorea*

P. 78, line 12 from bottom, for *Piricande* read *Piricauda*

P. 78, line 9 from bottom, for 1914 read 1913

P. 78, line 7 from bottom, for *Hendersonia* read *Hendersonina*

P. 79, line 8 from top, for Dirls read Diels

P. 79, line 32 from top, for *Crepyaceae* read *Cyperaceae*

P. 149, table I, line 3 from top, for 870 read 820

P. 149, line 16 from bottom, for 870 read 820

P. 149, line 3 from bottom, for new read net

P. 158, line 12 from top, for absorption read adsorption

P. 228, line 10 from top, for *Parthenium* read *Parthenocissus*

P. 376, line 20 from top, for longae read longi

P. 376, line 25 from top, for crenulatatus read crenulatus

P. 385, line 16 from top, for eodum read eodem

P. 385, line 31 from top, for laevilus read laevibus